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AESO/SE  
2-21-00-F-052

December 27, 2000

Mr. Terry Oda, Chief  
CWA Standards and Permits Office  
United States Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, California 94105-3901

Dear Mr. Oda:

This responds to the Environmental Protection Agency's May 26, 2000, letter to the U.S. Fish and Wildlife Service requesting initiation of formal section 7 consultation under the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). The consultation concerns the possible effects of your proposed issuance of a National Pollutant Discharge Elimination System (NPDES) Storm Water Permit to Carreon Construction for the Tecolote de Oro development project in Pima County, Arizona. The species potentially affected by this action is the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) (pygmy-owl) and its critical habitat.

Your request for formal consultation on this project was received on May 26, 2000. However, the project description was subsequently modified which resulted in a modification of the completion date. This document represents the Service's biological opinion on the effects of that action on the above mentioned species in accordance with section 7 of the Act.

This biological opinion is based on information provided in the April 2000 biological assessment prepared by WestLand Resources, Inc., on behalf of Carreon Construction, the June 2000 and the September 22, 2000, Addendum to the Biological Assessment, telephone conversations between members of our staff, field investigations, and other sources of information. References cited in this biological opinion are not a complete bibliography of all literature available on the species of concern, its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file in this office.

#### CONSULTATION HISTORY

Informal discussions between and Harris Environmental, DJA Engineering Corp., Carreon Construction, WestLand Resources (Jim Tress), and the Service began around October 1999. Several telephone calls and conference calls occurred between October 1999 and the time EPA submitted the biological assessment, prepared by WestLand Resources, Inc., to this office. The

biological assessment and request for consultation were received on May 26, 2000, with a supplement received on June 6. On July 12, 2000, the Service sent a letter to EPA with a few questions and points of clarification, but also stating that EPA had supplied sufficient information to initiate formal consultation with the Service. In that letter, we also encouraged EPA to work with the project proponents (Carreon Construction) to restructure the development to meet the Service recommendations for conservation of pygmy-owl habitat.

A meeting was held between the Service's Arizona Ecological Service Field Office (AESO), WestLand Resources, Arizona Department of Environmental Quality, EPA, and Carreon Construction on September 11, 2000 to discuss the Service's July 12 letter. As a result of the meeting, a revised biological assessment was sent to the Service by WestLand Resources, Inc. on September 22, 2000, and received on September 25, 2000. Also at the September 11 meeting, EPA and the Service informally agreed to extend the consultation to allow for additional project modification. Formal consultation was initiated on June 6, with a biological opinion anticipated by October 19, 2000. Because of the additional time needed to evaluate the modifications to the project description, and the informal agreements made at the September 11 meeting, the consultation period was extended to December 30, 2000. On December 11 a draft BO was sent to EPA, San Francisco. On December 20, AESO received an e-mail from Eugene Bromley, EPA, San Francisco, with one editorial change to the draft BO and requested that the document be finalized.

## **BIOLOGICAL OPINION**

### **DESCRIPTION OF PROPOSED ACTION**

The proposed action is the EPA issuance of a NPDES construction general permit to facilitate development of 14 custom residential lots, associated roadways, a sewer line, water lines, and three retention basins, and natural open space on the Tecolote de Oro acre project site. The 29.2 acre (11.8 ha) residential development planned by Carreon Construction, will include 14 custom lots and associated onsite utilities and roads on the eastern portion of the property. Each lot will be restricted to a maximum gradable area of 10,000 square feet, including all building pads, driveways, patio areas, landscaped areas, and other appurtenant structures, including corals, and other features where horses are allowed by zoning.

A waterline will be constructed between Lots 4 and 5 which will connect to an existing 8-inch water main within the La Cholla Boulevard right-of-way. An additional 12-inch water line will be constructed along the north end of the property along the existing driveway. The water service will not become functional until a new 12-inch water main is constructed to within approximately 900 feet of the property. Approximately 1.33 acres (0.54 ha) of the area will be revegetated with native seed mix, including the sewer line right-of-way, waterline rights-of-way, and retention basins. Best Management Practices are in place to ensure appropriate stabilization of toxic chemicals, sediment, storm water runoff, spills, etc.

### **Conservation Measures**

The western lots include 22.8 acres (29.2 total acres minus 6.4 acres disturbed), a significant natural open space that will not be developed. This restriction will be required through specific language in the Contracts, Covenants, Conditions, & Restrictions established for the development. The area within the 100-year floodplain will be maintained as open space in perpetuity. Two site visits each year will record the status of vegetation, wash habitats, and other natural features of open space. Four permanent photosites will be established and correspond to qualitative descriptions which document a representative view of the total open space area. An annual report including the photographic records and summary of site visits, documenting the integrity of the area, will be due to the Service by November 30<sup>th</sup> each year. This work will be conducted by an independent, not yet established monitor. Carreon Construction will respond promptly to the reports and take steps to remedy the situation and mitigate for damage. The Home Owner's Association will be responsible for implementation of the monitoring program after construction is complete. Carreon Construction will also maintain cactus ferruginous pygmy-owl surveys in accordance with the January 2000 protocol, during the infrastructure development phases of the project.

## STATUS OF THE SPECIES

### **Listing History**

The Service listed the Arizona population of pygmy-owls on March 10, 1997, effective on April 9, 1997 (USFWS 1997 [FR 62 10730]). The past and present destruction, modification, or curtailment of habitat is the primary reason for the decrease in population levels of the pygmy-owls. On July 12, 1999, we published a final rule (USFWS 1999 [64 FR 37419]) which designated approximately 296,240 ha (731,712 ac) of riverine, riparian, and upland habitat in Pima, Cochise, Pinal, and Maricopa counties in Arizona. Only lands containing, or likely to develop, those habitat components that are essential for the primary biological needs of the owl are considered critical habitat. By definition, all areas above 1,219 m (4,000 ft), areas not containing or capable of developing constituent elements (e.g., saguaro, large diameter trees, etc.), existing features and structures (e.g., roads, buildings, etc.) and areas not requiring special management or other areas (e.g., National Parks, Tribal lands, etc.) were excluded and are not critical habitat. The actual area meeting this definition as defined in the final rule is substantially less than the total area within the exterior boundaries of the area designated.

Areas designated as critical habitat included recent owl locations and important areas for genetic and demographic interchange within the geographical area occupied by the species that are essential to the conservation of the species and requiring special management considerations. These areas, containing the primary constituent elements, or the capacity to develop these habitat components are essential for the primary biological needs of this species and include foraging, nesting, rearing of young, roosting, sheltering, and dispersal. Actions that may destroy or adversely modify critical habitat are actions that destroy or alter the primary constituent elements to the extent that the value of critical habitat for both survival and recovery of the species is appreciably diminished. These activities include, but are not limited to: removing vegetation, water diversions or impoundments, ground water pumping, and recreational activities that appreciably degrade habitat.

## **Species Description**

A detailed description of the life history and ecology of the pygmy-owl may be found in the Birds of North America (Proudfoot and Johnson 2000), Ecology and Conservation of the Cactus Ferruginous Pygmy-owl in Arizona (Cartron and Finch 2000), and other information available at the Arizona Ecological Services Field Office. Information specific to the pygmy-owl in Arizona is limited. Research in Texas has provided useful insights into the ecology of the subspecies, and in some instances represents the best available information; however, habitat and environmental conditions are somewhat different in Arizona and conclusions based on Texas information are tentative.

Pygmy-owls are small birds, averaging 17 cm (6.75 in) in length. The average weight of a male is 62 g (2.2 oz), while females average 73 g (2.6 oz). Pygmy-owls are reddish-brown overall, with a cream-colored belly streaked with reddish-brown. Their crown is lightly streaked, and they have paired black-and-white “eye” spots on the back of their head and neck. They have no ear tufts and their eyes are yellow. Their tail is reddish-brown with darker bars, and is relatively long for an owl.

Pygmy-owls are crepuscular/diurnal, with a peak activity period for foraging and other activities at dawn and dusk. During the breeding season, they can often be heard calling throughout the day, but most activity is reported between one hour before sunrise to two hours after sunrise, and late afternoon/early evening from two hours before sunset to one hour after sunset (Collins and Corman 1995).

## **Distribution and Abundance**

Specific information on the amount of suitable habitats required to support pygmy-owls in Arizona is incomplete. Research in Texas has provided useful insights of the ecology of this subspecies; however, the habitat and conditions are somewhat different than in Arizona. For instance, owls found in developed areas appears to be unique to northwest Tucson, not found in other portions of this subspecies’ range.

## **Habitat Use**

In central and southern Arizona, their primary habitats are riparian cottonwood forests, mesquite bosques, and Sonoran desertscrub, although most recent observations have occurred primarily in Sonoran desertscrub associations of palo verde, bursage, ironwood, mesquite, acacia, and giant cacti such as saguaro and organ pipe (Gilman 1909, Bent 1938, van Rossem 1945, Phillips et al. 1964, Monson and Phillips 1981, Johnson-Duncan et al. 1988, Millsap and Johnson 1988). Farther south in northwestern Mexico, pygmy-owls occur in Sonoran desertscrub, Sinaloan thornscrub, and Sinaloan deciduous forest as well as riverbottom woodlands, cactus forests, and thornforest (Enriquez-Rocha et al. 1993).

While the majority of Arizona pygmy-owl detections in the last six years have been from the northwest Tucson area, pygmy-owl have also been detected in southern Pinal County, at Organ

Pipe Cactus National Monument (OPCNM), on the Buenos Aires National Wildlife Refuge (BANWR), and on the Coronado National Forest. Pygmy-owls at OPCNM have been detected in Sonoran desertscrub habitat dominated by creosotebush (*Larrea tridentata*), saguaro, velvet mesquite (*P. velutina*), palo verde, cat-claw acacia, ironwood, triangle-leaf bursage (*A. deltoidea*), and white brittlebush (*Encelia farinosa*). Small washes in the area support canyon ragweed (*A. ambrosioides*) and salt cedar (*Tamarix pentandra*). In addition, relatively large mesquite bosques are present in some areas (Collins and Corman 1995). On the BANWR and adjacent areas in the Altar Valley, pygmy-owls have been located within riparian habitat in semi-desert grassland communities. Vegetation in these riparian areas included netleaf hackberry, velvet mesquite, Arizona ash (*Fraxinus velutina* var. *velutina*), acacia, and Mexican elderberry (*Sambucus caerulea*).

Pygmy-owls are known to use a variety of habitat types such as riparian woodlands, mesquite bosques, and Sonoran desertscrub communities as well as in nonnative habitat within these communities. While plant species composition differs between these communities, there are certain unifying characteristics in each of these occupied habitat types. These unifying characteristics include the presence of vegetation in a fairly dense thicket or woodland, the presence of trees or cacti large enough to support cavity nesting, and elevations below 1,616 m (4,000 ft). Historically, pygmy-owls were associated with riparian woodlands in central and southern Arizona. Plants present in these riparian communities include cottonwood, willow (*Salix* spp.) and hackberry (*Celtis* spp.). Cottonwood trees are suitable for cavity nesting, while the density of mid- and lower-story vegetation provides necessary protection from predators and an abundance of prey items for the pygmy-owls. Mesquite bosque communities are dominated by mesquite trees, and are described as mesquite forests due to the density and size of the trees.

## **Life History**

### **Nesting**

Pygmy-owls begin nesting activities in late winter to early spring. Much of the specific timing of pygmy-owl nesting chronology is unknown due to limited opportunities for study and the secretive nature of the pygmy-owl.

In both Texas and Arizona, observations indicate that the female incubates the eggs and attends hatchlings, while the male provides food to the female and young. In Texas, studies noted that males provided all of the food collected for the females and their young for approximately the first week following hatching (Proudfoot 1996). In Arizona, the majority of hunting activity and prey captures by male pygmy-owls were conducted away from the nest site and, consequently, out of sight of nest observers (Abbate et al. 1996).

Pygmy-owls nest in natural cavities or those made by other species, particularly by Gila woodpeckers (*Melanerpes uropygialis*), and rely on suitable cavities to be present for roosting and nesting. Pygmy-owls nest in a cavity in a tree or large columnar cactus. Historically, nests were found in cavities of cottonwood, willows, or mesquites, and with the loss and alteration of riparian areas in Arizona, saguaros may now provide the most available source of cavities for nesting.

Most recent nests have been located in saguaro cavities (Abbate et al. 1996, S. Richardson, AGFD unpubl. data). Although recent nest sites have primarily been located in saguaro cavities, in 1999, two nests were also located in cavities of other tree species (one each in an ash and eucalyptus [*Eucalyptus* spp.]) (S. Richardson, AGFD unpubl. data). These cavities may be naturally formed (e.g., knotholes) or excavated by woodpeckers, and nest lining material may or may not be present. Researchers in Texas noted that one pair of pygmy-owls removed material from a cavity prior to laying eggs one year, but laid eggs on material in the nest cavity the following year (Proudfoot et al. 1994a). Breninger (1898) noted that no nest lining was used at one observed nest. Whether or not a nest lining is actually constructed, it is likely that prey remains, including feathers and other materials, build up on the nest cavity floor during its use.

Adult pygmy-owls, and particularly young may be susceptible to predation from avian species such as Cooper's hawks (*Accipiter cooperii*), Harris's hawk (*Parabuteo unicinctus*), great horned owls (*Bubo virginianus*) and others; therefore, cover, particularly near nest sites for young to fledge to are important (Wilcox et al. 1999, S. Richardson, AGFD pers. comm. 1999).

In Texas, Proudfoot (1996) using radio telemetry determined that the area used by adult male pygmy-owls (n=3) during the incubation period ranged in size from 1 to 9 ha (3 to 21 ac), with a mean size of 4 ha (10 ac). Proudfoot (1996) further determined that pygmy-owls of unknown sex used an area ranging from 19 to 115 ha (48 to 287 ac), with a mean of 68 ha (172 ac) in late fall. Additionally, Proudfoot (1996) notes that, while pygmy-owls used between 1 and 9 ha (3 and 21 ac) during the breeding season, they would defend areas up to 113 ha (279 ac), indicating that their total territory may encompass an area at least 110 ha (279 ac) in size. Proudfoot (unpubl. data) indicated that pairs utilize an area within 600 m (1,969 ft) of their nest site. Proudfoot (unpubl. data) has stated that his data indicate that the area necessary to successfully raise young is approximately 39.5 ha (98.8 ac).

Based on visual and auditory detections of one adult pair and one fledgling at a 1996 nest site, Abbate et al. (1996) estimated a breeding season home range size for pygmy-owls in Arizona. By following the adult female and the fledgling, it was noted the size of the area used by the female and fledgling expanded as the fledgling aged. In fact, the fledgling was observed at what may have been the northern and southernmost points of the nesting territory. In contrast, the adult male appeared to be using the same size area during incubation as he did during the nestling stages. The adult female was observed to use an area approximately 0.2 ha (0.5 ac) in size during the pre-fledgling and nesting stages. However, this area expanded to approximately 14 ha (35 ac) post-fledgling, this area was also used by the fledgling (Abbate et al. 1996). Following dispersal of the fledgling, it was believed that the area used by the adult pygmy-owls expanded beyond the 14 ha (35 ac) area (Abbate et al. 1996). An additional pair of pygmy-owls was found in the late fall of 1997. Researchers in Arizona indicated that this pair used approximately 64 ha (160 ac) (S. Richardson, AGFD unpubl. data). In addition, an unpaired male was monitored by AGFD in the late fall of 1997 and used approximately 64 ha (160 ac) (S. Richardson, AGFD unpubl. data).

### **Food Habits**

Pygmy-owls must have available to them, sufficient prey items to survive and successfully raise their young. Proudfoot (1996) observed an increase in home range size during the winter months

up to 113 ha (to 280 ac), possibly due to less abundant prey species. Because this subspecies is considered a generalist, seasonal and annual shifts in diet likely occur due to availability of prey (Proudfoot 1996, Proudfoot et al. 1994b, S. Richardson, AGFD unpubl. data). Prey species may be less abundant during winter months, possibly forcing owls to forage over a wider area. Initial results from ongoing studies in Texas indicate that the home range of pygmy-owls may also expand substantially during dry years (G. Proudfoot unpubl. data). Based on the above information, it appears that survival during winter months, and possibly exacerbated in dry years with less abundant prey species available, may be of particular concern for this species. Therefore, the use of the maximum home range territory size 113 ha (280 ac) is appropriate to adequately support a pair and to provide sufficient prey and cover throughout the year.

Pygmy-owls typically hunt from perches in trees with dense foliage using a perch-and-wait strategy; therefore, sufficient cover must be present within their home range for them to successfully hunt and survive. Their diverse diet includes birds, lizards, insects, and small mammals (Bendire 1888, Sutton 1951, Sprunt 1955, Earhart and Johnson 1970, Oberholser 1974) and frogs (Proudfoot et al. 1994b).

### **Rangewide Present Status**

According to early surveys referenced in the literature, the pygmy-owl prior to the mid-1900s, was "not uncommon," "of common occurrence," and a "fairly numerous" resident of lowland central and southern Arizona in cottonwood forests, mesquite-cottonwood woodlands, and mesquite bosques along the Gila, Salt, Verde, San Pedro, and Santa Cruz rivers and various tributaries (Breninger 1898 in Bent 1938, Gilman 1909, Swarth 1914). Bendire (1888) noted that he had taken "several" along Rillito Creek near Fort Lowell, in the vicinity of present-day Tucson, Arizona. Records indicate that pygmy-owls were initially more common in xeroriparian habitats (very dense thickets bordering dry desert washes) than more open, desert uplands (Monson and Phillips 1981, Johnson and Haight 1985, Johnson-Duncan et al. 1988, Millsap and Johnson 1988, Davis and Russell 1990). The pygmy-owl was also noted to occur at isolated desert oases supporting small pockets of riparian and xeroriparian vegetation (Howell 1916, Phillips et al. 1964).

The historic use of Sonoran desertscrub habitats by pygmy-owls is not as clear. A disproportionately low number of historical records from desertscrub habitats may be due to the focus of early collection efforts along rivers where humans tended to concentrate, while the upland areas received less survey. An additional hypothesis is offered by Johnson and Haight (1985), who suggest that pygmy-owls adapted to upland associations and xeroriparian habitats in response to the demise of Arizona's riparian bottomland woodlands. It is also possible that desertscrub habitats simply are of lesser quality but have always been occupied by pygmy-owls at lower frequency and density (Johnson and Haight 1985, Taylor 1986). Historical records of pygmy-owls do exist for Sonoran desertscrub in areas such as the Santa Catalina foothills and in "groves of giant cactus" near New River, north of Phoenix. Kimball (1921) reported one pygmy-owl in a mesquite tree in the foothills of the Santa Catalina Mountains. Fisher (1893) took two specimens near New River, and observed "several others" in mesquite and large cacti.

The range of pygmy-owls in Arizona extends from the International Border with Mexico north to central Arizona. The northernmost historic record for the pygmy-owl is from New River, Arizona, about 56 km (35 mi) north of Phoenix, where Fisher (1893) reported the birds to be "quite common" in thickets of intermixed mesquite and saguaro cactus. The Museum of Vertebrate Zoology contains a clutch of four eggs collected by G.F. Breninger on May 18, 1898 in Phoenix, Maricopa County. One additional record exists for this northern portion of the species' range, and is filed under R.D. Lusk with the United States National Museum Smithsonian Institution. This record indicates that five eggs and a skin were collected at Cave Creek on April 12, 1895 (USNM 1996). Cactus ferruginous pygmy-owls were also detected in central Arizona at the Blue Point Cottonwoods area, at the confluence of the Salt and Verde rivers, in 1897, 1949, 1951, and 1964 (AGFD 1999, Phillips et al. 1964). Additionally, pygmy-owls were detected at Dudleyville on the San Pedro River as recently as 1985 and 1986 (AGFD 1999, Hunter 1988).

Records from the eastern portion of the pygmy-owls range include a 1876 record from Camp Goodwin (nearby current day Geronimo) on the Gila River, and a 1978 record from Gillard Hot Springs, also on the Gila River. Pygmy-owls have been found as far west as the Cabeza Prieta Tanks in 1955 (Monson 1998).

Hunter (1988) found fewer than 20 verified records of pygmy-owls in Arizona for the period of 1971 to 1988. Although pygmy-owls are diurnal and frequently vocalize in the morning, the subspecies was not recorded or reported in any breeding bird survey data in Arizona (Robbins et al. 1986). Formal surveys for the pygmy-owls on OPCNM began in 1990, with one located that year. Beginning in 1992, survey efforts conducted in cooperation with the AGFD, located three single birds on OPCNM (USFWS and OPCNM unpubl. data).

In 1993, surveys were conducted at locations where pygmy-owls had been sighted since 1970. These areas included the lower San Pedro River from Cascabel to Winkelman, northwest Tucson, east Tucson from Sabino Canyon to Tanque Verde Wash, the lower elevations of Saguaro National Park, Rincon Mountain District, Rincon Creek from the X-9 Ranch to Thunderhead Ranch, and the confluence of the Salt and Verde rivers. Only one pygmy-owl was detected during these survey periods, and it was located in northwest Tucson (Felley and Corman 1993).

Surveys were again conducted in 1994 at Catalina State Park north of Tucson, Winkelman, the Aravaipa Creek confluence, near Mammoth, and Bingham Cienega along the lower San Pedro River, Cabeza Prieta National Wildlife Refuge, Picacho Reservoir, Sycamore Canyon in the Pajarito Mountains, and at the confluence of the Salt and Verde rivers. These surveys yielded no pygmy-owl detections (Collins and Corman 1995). However, two owls were located in northwest Tucson during informal survey work by AGFD (Abbate et al. 1996).

In 1996, AGFD focused survey efforts in northwest Tucson and Marana and detected a total of 16 pygmy-owls, two of which were a pair, and two of which were fledglings. Three additional birds were detected at OPCNM in 1996. There were also three additional but unconfirmed reports of pygmy-owls from OPCNM.

In 1997, survey efforts of AGFD located a total of ten individuals in their Tucson Basin study area, which is roughly bounded on the north by the Picacho Mountains on the east by the Santa Catalina and Rincon Mountains, on the south by the Santa Rita and Sierrita Mountains, and on the west by the Tucson Mountains. Eight of the ten pygmy-owls were found in the northwest Tucson area, and the remaining two were found on the western bajada of the Tortolita Mountains. Of the eight pygmy-owls documented from northwest Tucson in 1997, one pair successfully fledged four young. The remaining three pygmy-owls included a single adult in the northwest Tucson area and the two pygmy-owls found on the western bajada of the Tortolita Mountains. Nine of the pygmy-owls were located during the nesting season, while three were located in the fall. Of the three pygmy-owls located in the fall, two were known to be from the nest site. It is unknown if the third pygmy-owl located in the fall was from the known nest site for that year. This pygmy-owl was located more than 3 km (2 mi) from the nest site, and was counted as the tenth pygmy-owl for 1997 (S. Richardson, AGFD unpubl. data). Two adult males were also located at OPCNM 1997, with one reported from a previously unoccupied area (T. Tibbitts, OPCNM unpubl. data).

In 1998, a total of 35 pygmy-owls were observed, including 11 juveniles in Tucson area, and five juveniles at OPCNM (S. Richardson, AGFD unpubl. data, USFWS unpubl. data, T. Tibbitts, OPCNM unpubl. data, D. Bieber, Coronado National Forest unpubl. data). Three adults were found along xeroriparian drainages in semi-desert grassland in southern Arizona, and two adults were also located in Pinal County. One adult was located in eastern Tucson as well (USFWS unpubl. data). We believe that the larger number of owls observed in 1998 is largely due to increased survey effort from previous years, and location of successful nest sites.

The 1999 survey season resulted in a total of 41 adult pygmy-owls found in Arizona. Statewide, a total of 28 pygmy-owl sites were documented, 10 of which had nesting confirmed which produced 33 young, although only 16 juveniles were known to successfully fledge (juveniles documented to have successfully dispersed from their natal area) (S. Richardson, AGFD unpubl. data).

Surveys conducted in 2000 resulted in 24 confirmed pygmy-owl sites (i.e. nests and resident pygmy-owl sites) and several other unconfirmed sites (S. Richardson, Arizona Game and Fish Department unpubl. data, T. Tibbitts, Organ Pipe Cactus National Monument unpubl. data, U.S. Fish and Wildlife Service unpubl. data). A total of 34 adult pygmy-owls were confirmed. Nesting was documented at 7 sites and 23 fledglings were confirmed; however, as in 1999, over a 50% fledgling mortality was documented (S. Richardson, Arizona Game and Fish Department unpubl. data). A total of 9 juveniles were known to have successfully dispersed from their natal areas in 2000. Successful dispersal was not confirmed at two nests with four fledglings. The status of the remaining fledglings is unknown; however, they are presumed dead. Pygmy-owls were found in three distinct regions of the state: the Tucson Basin (northwest Tucson and southern Pinal County), Altar Valley, and OPCNM.

1. **Tucson Basin** - A total of 14 adults were documented at 10 sites (11 adults at 8 sites in northwest Tucson and 3 adults at 2 sites in southern Pinal County) found in Sonoran desertscrub and xeroriparian vegetation. The three nests in northwest Tucson produced 10 young, of which 5 juveniles successfully dispersed.

The one nest in southern Pinal County produced 5 fledglings, of which 3 juveniles successfully dispersed. There were also several unconfirmed pygmy-owl sites.

2. **Altar Valley** - A total of 7 adult pygmy-owls were documented at 6 sites. One nest was confirmed, producing 4 fledglings, of which 4 juveniles successfully dispersed from their natal area.
3. **OPCNM** - Six sites were confirmed as active, although nesting was not confirmed at any of these sites.
4. **Other** - There were two confirmed pygmy-owl nest sites reported elsewhere in southern Arizona, producing 4 fledglings. It is unknown how many of these young successfully dispersed. There were several other reported, but unconfirmed pygmy-owl sightings elsewhere in the state.

Overall, mortality was documented for a number of fledglings due to natural causes (e.g., predation). Of the 33 young documented in 1999, only 16 were documented as surviving until dispersal, and the fate of several others was unknown. It is unclear what the survival rate for pygmy-owls is; however, as with other owls and raptors, a high mortality (50 percent or more) of young is typical during the first year of life.

In summary, the Tucson Basin contains one of the highest known concentrations of pygmy-owls in Arizona. Surveys in 1996 found 16 pygmy-owls in this area, including one pair and two fledged young. Surveys in 1997 located nine pygmy-owls, including one pair and four fledged young. In 1998, researchers found three nests where 11 juveniles were successfully raised in this area alone, which is at least twice the number of young documented in any prior year. In 1999, four pairs of pygmy-owls were documented nesting and three territorial single males were found in the northwest Tucson (S. Richardson, AGFD unpubl. data). The 2000 surveys have resulted in ten sites confirmed within the action area. At these sites 14 adults have been documented and four nests have been confirmed (S. Richardson, AGFD unpubl. data).

## ENVIRONMENTAL BASELINE

The environmental baseline serves to define the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation. While it is clearly focused on conditions in the action area, it is important to include in the environmental baseline the status of the listed species throughout its range as well as in the action area. Any evaluation of the effects of the action must be made in the context of the overall status of each affected species.

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process.

The Carreon Construction Tecolote de Oro project site is located at T12 S, R13 E in Pima County, Arizona. The project is located to the west of La Cholla Boulevard between Lambert and Linda Vista streets. The project site is within the Arizona Upland Subdivision of the Sonoran Desertscrub vegetation community (Brown 1994) and is located in designated critical habitat near the eastern boundary of Unit 4.

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). The Service has determined the action area to include the project site and areas within 19 mi (31 km) of the project site. The Service based this determination on the dispersal distance of juvenile pygmy-owls in Texas and Arizona (Proudfoot unpubl. data, S. Richardson, AGFD unpubl. data). With so few individual pygmy-owls this dispersal distance may be periodically needed to maintain genetic fitness. We have also documented movement between owls in southern Pinal County and northwest Tucson (S. Richardson, AGFD unpubl. data).

The project site is within the paloverde-cacti-mixed scrub series of the Arizona Upland Subdivision of the Sonoran Desertscrub community. The paloverde-cacti-mixed scrub series is described as developed on the bajadas and mountain sides away from valley floors. A bajada is the area between level plains and the foot of a mountain, and is dissected by arroyos, exhibiting numerous variations in slope and pattern. While there is great variation between bajadas, they are generally characterized by good drainage, and slowed evaporation, resulting in enhanced growing conditions for xerophytic plants. Cacti are particularly prevalent on bajadas, and woody, spiny shrubs and small trees, and annuals are abundant. The increased diversity of plants supports a diversity of wildlife species (Benson and Darrow 1981, Olin 1994). A list of plant and wildlife species associated within this subdivision can be found in Appendix II of Brown (1994), and is incorporated herein by reference.

The project area consists of low woodland of leguminous trees with an overstory of columnar cacti and with one or more layers of shrubs and perennial succulents. The columnar cacti include saguaros (*Carnegiea gigantea*); trees include blue paloverde (*Cercidium floridum*), foothills paloverde (*C. microphyllum*), ironwood (*Olneya tesota*), mesquites (*Prosopis* spp.), and cat-claw acacia (*Acacia* spp.). Cacti of many species are found within this subdivision, and include many varieties of cholla and prickly pear (*Opuntia* spp.), fish-hook barrel cactus (*Ferocactus wislizenii*), and compass barrel cactus (*F. acanthodes*) (Brown 1994).

The project is within critical habitat Unit 4 and Recovery Area 3, as recommended by the pygmy-owl Recovery Team (USFWS 2000), which supports the highest number and density of breeding pygmy-owls known in Arizona. The primary purposes of this unit are to provide and protect breeding habitat for known owls and for the establishment of new pairs. Recovery Area 3 also is designed to allow movement of owls to the northwest to Recovery Areas 2, 4, and 5. The project area also lies within a Special Management Area (SMA) recommended by the Recovery Team as an area requiring special management considerations. Although no pygmy-owls have been recorded within the project site, a resident owl was documented as close as within approximately 0.8 km (0.5 mi) to the south of the project during 2000. There are also three nests and four resident single owl territories within five miles of the project site in 2000.

We are aware of many planned residential and commercial developments, schools, churches, etc. in the action area that may further reduce and fragment pygmy-owl habitat in this area. Additionally, this area is currently experiencing a rapid growth in new home sales and development. Since the listing of this distinct population segment in Arizona, housing construction has continued to increase in the Tucson area. For example, in May 1999, new-home closings were a record 467 units, higher than any other May within the past decade (The Arizona Star 1999). In 1999, Tucson-area building permits were 10.9 percent more than in 1988, and topped 7,000 for the first time. Permits were highest in northwest Tucson and, for the first time, Marana issued more than 1,100 permits, with a strong building trend expected to continue steady or increasing (The Arizona Star 2000). We have received, and continue to receive notification of numerous new housing subdivisions and commercial developments in this region as well.

Both federally permitted and private actions are expected to continue to grow in the action area in the near future. In December 1999, approximately 16 ha (40 ac) were graded for the Amphitheater High School site in northwest Tucson. We did not receive a request for consultation on this activity prior to grading. During the first six months of 2000, we have conducted over 75 informal section 7 consultations within the project area (e.g., planned residential, commercial, and other developments) and have provided technical assistance to hundreds of individuals seeking to develop single family residents on individual lots. Some of the more significant projects during 2000 in the Tucson Basin have included the Countryside Vistas development, a project southwest of I-10, and the Dove Mountain master planned community where incidental take (in the form of non-lethal harassment only) is anticipated for one pair or resident single pygmy-owl.

We have completed several livestock grazing consultations with the USDA Forest Service and Bureau of Land Management (BLM) in southern and central Arizona that addressed adverse impacts to pygmy-owls. These consultations resulted in a non-jeopardy and no adverse modification determination by the Service. We have also reinitiated consultation with the BLM on the effects their grazing program has on the pygmy-owl and its critical habitat.

In December 1998, a Habitat Conservation Plan (HCP) and 10(a)(1)(B) permit for the pygmy-owl was approved for a guest ranch which may eventually be converted to low density residential housing in northwest Tucson. Incidental take of one pair and their off-spring in the form of harassment was anticipated.

No habitat restoration projects specific to the pygmy-owl exist for lands managed by the U.S. Government, Indian Nations, State agencies, or private parties. The Forest Service and BLM have focused attention in some areas on modifying livestock grazing practices in recent years, particularly as they affect riparian ecosystems. Several of these actions are within the currently known range of pygmy-owls, including historical locations.

### **Population Estimates**

Pygmy-owls were first documented in the action area around 1872 (see Status and Distribution section above) and historically were widespread in, and immediately adjacent to, the project site. Collections of pygmy-owls were fairly regular in this region compared to elsewhere in the state until 1918 (Johnson et al. in prep.). Only one pygmy-owl observation was recorded between 1918

and the 1970's (Hunter 1988, Johnson et al. in prep.). Several sightings of pygmy-owls were documented during the 1970's in the Basin; however, systematic surveys did not take place until 1993 by AGFD (AGFD 1994, AGFD 1995, Abbate et al. 1996). Survey efforts in this area have dramatically increased since listing, particularly in the last couple of years (USFWS unpubl. data). In addition, AGFD initiated radio telemetry research in the action area in 1998, which has provided valuable information on habitat use and movement patterns of adult and juvenile pygmy-owls.

Surveys for the pygmy-owl were conducted on the project site on October 22 and 23, 1998, and on November 8, 1999 by Harris Environmental. All surveys were conducted following the previously approved protocol; no owls were recorded (Harris Environmental 1999). WestLand Resources conducted three surveys during 2000 (April 6, April 24, and June 2).

There have been no documented uses of the project site by pygmy-owls, either nesting or dispersal, and the site is not within a known pygmy-owl territory. However, there have been 18 different pairs or resident males documented within an approximate 32 km (19 mile) radius area of the project site since 1996 (S. Richardson, AGFD unpubl. data, USFWS unpubl. data). Most recently, in 2000, there were four active nest sites and six resident male pygmy-owls documented within this same vicinity (S. Richardson AGFD unpubl. data, USFWS unpubl. data).

We currently know of only a small population (14 adults during 2000) of pygmy-owls in the action area. However, the information regarding owl use of this area over time is limited. Specific use information collected in the action area, and particularly the vicinity of the project site, represents only limited data, collected primarily over the past four years. For example, use of radio telemetry equipment, which provides detailed information on use patterns and areas wasn't utilized until 1998, and its use has been limited by the small number of birds transmittered and available resources (i.e., limited personnel for intensive monitoring and equipment). In addition, battery life on radio transmitters is limited to only 90 days because of the small size that must be used on these small owls, which further limits the amount of telemetry data that can be collected. Further, pygmy-owls can typically only be captured and fitted with radio transmitters during the spring and early summer, which further limits the amount and type of data that can be gathered.

To determine the level of vegetation disturbance nesting pygmy-owls may be able to tolerate, a group of pygmy-owl experts completed an analysis of all nest site home ranges (n=6) occurring in developed areas that successfully produced offspring. They calculated the amount of vegetation disturbance (e.g., roads, buildings, horse corals, pastures, parking lots, golf courses, etc.) within the estimated home range (280 acres) at each nest site. They calculated their average percent disturbance to be 21% (median 21%). However, four of the six home ranges had levels below that average. Three of the six sites were within the 20-25% disturbance range.

There also appears to be a difference in the tolerance to the amount of vegetation disturbance (i.e., development) between nesting and non-breeding pygmy-owls. Single owls may be able to tolerate higher levels of development and more marginal habitats, while breeding owls may need less disturbed vegetation within their home ranges. An analysis of all known pygmy-owl sites in northwest Tucson resulted in a considerably lower amount of vegetation disturbance at nest sites compared to non-breeding sites (e.g., unpaired males) (S. Richardson, Arizona Game and Fish Department unpubl. data). As stated above, the average amount of vegetation disturbance within

the home range of 1998-2000 nesting sites was 21% (also the median). The amount of vegetation disturbance within the home range of non-breeding sites was considerably higher, averaging 39% (median 31%). Although these overall results are based on a small sample size (n=10), they represent the best available information and indicate that nesting pygmy-owls may require less disturbed areas than unpaired owls. For example, a juvenile male pygmy-owl established a new territory in the fall of 1999 in a highly developed residential area in northwest Tucson and remained there throughout the 2000 breeding season. This male failed to pair with a female owl, even after vigorous calling throughout the spring and summer months. Within its estimated home range, habitat is highly fragmented, containing the highest degree of development (50%) of any other known pygmy-owl territory (S. Richardson, Arizona Game and Fish Department unpubl. data.). Differences in the tolerance of vegetation disturbance between breeding and non-breeding owls are important because nesting owls are necessary for recruitment of young owls and demographic support to achieve recovery of the pygmy-owl in Arizona. Although also important to the population from a demographic standpoint, non-breeding males do not directly contribute to the increase of the population by producing young. Therefore, the Service and Recovery Team believe that because successful breeding sites are necessary to produce offspring for the survival and eventual recovery of the pygmy-owl Arizona population, vegetation disturbance levels found at breeding sites should be used as guidelines rather than those in non-breeding territories. These guidelines are particularly important within specific areas of the state (i.e., SMAs) identified by the Recovery Team (U.S. Fish and Wildlife Service 2000). More research and monitoring is needed to better understand habitat needs and the relationship between development and pygmy-owl requirements.

It should be noted that the nest site with the highest amount of vegetation disturbance (33%) is that of a long established pair that was documented from 1997 through 1999. Development in the general vicinity of this site continued during this time. As noted above, the male of this pair was found dead late last summer. Surveys in 2000 did not locate any pygmy-owls at this site. Site tenacity in the short-term may have been a factor in this pair's ability to withstand this higher level of vegetation disturbance compared to other sites in Arizona; however, the long-term effect of this amount of disturbance is unknown. Other than at this site, nesting owls have not been documented in areas with more than 25%. As stated above, 14 of the 24 known owl sites in 2000 were located in undeveloped areas, which places the level of vegetation disturbance at this nest site even further as an extreme, compared to all the other sites in the state. The amount of development at this site is considered an exception rather than the norm; therefore, a maximum of 20% vegetation disturbance guideline is used for this SMA, particularly for large projects, to provide for the survival and recovery of the pygmy-owl (USFWS 2000).

## EFFECTS OF THE ACTION

### **Direct and Indirect Effects**

This proposed action will result in the disturbance of 29.2 acres (11.81 ha) of habitat including the permanent loss of approximately 6.4 ac (2.59 ha) of Sonoran desertscrub vegetation which likely provides foraging, sheltering, and movement and dispersal habitat for pygmy-owls and has the potential to support nesting pairs as owls disperse from nearby nests. This translates to over 21.9% surface disturbance. The Service has concluded that development within specific areas, such as

those recommended by the Recovery Team as a SMAs and in Recovery Areas, should be limited to 20 percent, particularly for large projects, to provide for the survival and recovery of the pygmy-owls (USFWS 2000). With the decision to revegetate approximately 0.09 acres (0.04 ha) along the driveway and 0.29 acres (0.12 ha) within the floodplain, surface disturbance will be reduced to 6.02 acres (2.44 ha) or 20.6% of the total project area. In the draft recovery plan, the Service determined that the 20% disturbance level is the likely maximum level tolerated by pygmy-owls in their nesting territories (USFWS 2000). This project exceeds the 20% guideline by 0.6% after numerous efforts were made by the project proponents to meet the guideline.

Although no pygmy-owls have been documented in the footprint of the project area, undisturbed suitable habitat for the species exists. The survival and recovery of the pygmy-owl will be dependent on the availability of areas of suitable habitat for offspring to disperse and establish new territories. Current information suggests that pygmy-owls can successfully live and breed in areas having at least some degree of human development. Although during 1999, more sites in Arizona were known to occur in undeveloped areas (14 sites) than developed areas (10 sites) (S. Richardson, AGFD unpubl. data, USFWS unpubl. data).

The project site is near existing urban development, and adjacent to a large expanse of undeveloped land that is also suitable habitat. The proposed action will also cause short-term noise disturbance associated with construction and long-term noise disturbance and increased human activity. Because of the lack of data specific to this subspecies in Arizona, we must also rely in part on our knowledge of effects this type of action may have on other species, particularly other raptors.

The action area, within which the proposed project site occurs, contains the highest known breeding concentration of pygmy-owls (four of the seven nest sites in 1999) within Arizona. It is also within Critical Habitat Unit 4 designated for the owl. The proposed action will result in the removal of about 6.4 ac (2.59 ha) of suitable nesting, foraging, roosting, and dispersal habitat that are also primary constituent elements for the owl. The site has been surveyed during the past two breeding seasons and is not within a known owl territory. No pygmy-owls have been recorded within the project site, although owls were documented as close as within 0.8 km (0.5 mi) to the south during 2000. This area is also threatened by rapid urban development. Survival and recovery of the pygmy-owl will be dependent on the availability of areas of suitable habitat for offspring to disperse and establish new territories. The number of free-roaming cats will likely increase in residential areas, which could affect pygmy-owls and their prey base if a new owl establishes a territory in the project site. It has been documented in Texas that free-roaming cats have killed both adult and fledgling owls. The use of herbicides and insecticides (pesticides) and fertilizers in the project site will increase. Based on the best available scientific information, it appears this species may be tolerant, at least to some extent, of certain low level noise disturbances associated with human activity. These disturbances include daily activities in residential areas such as people walking, voices, children playing, horses and other livestock, dogs, low to moderate vehicle and large truck traffic, and some occasional construction equipment activity. However, the threshold between noise levels and types of activities that an owl can tolerate versus those that will cause an owl to leave an area are not clearly known at this time. In residential and commercial areas lighting is expected to increase substantially; however, it is not quantified. Of particular concern is high intensity lighting in the close proximity of pygmy-owl nests, activity centers, and

movement corridors. Increased exposure to predation of adult pygmy-owls and fledglings could occur from great horned owls and other predators where bright lights are used near owl sites. If low intensity and directional lighting is used to reduce the exposure to predation of pygmy-owls in these areas, adverse effects would be substantially reduced or eliminated. Owls have not been documented establishing new territories or utilizing areas other than for movement in areas with high level of development.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of Act.

The Tucson area is subject to ongoing residential and commercial development pressures. State, local, and private actions include continued development immediately to the north and east of the project site and elsewhere in the action area. Any activity clearing 2 ha (5 ac) or more requires a NPDES section 402 permit under the CWA from the EPA and activities occurring within jurisdictional waters of the U.S. require a section 404 permit under the CWA from the Corps. As a result, a substantial number of these actions will be subject to future section 7 consultations. However, many individual undeveloped parcels that will not require a Federal permit or have a federal nexus (e.g., zoned SR) will continue to be built out, and will not be subject to future consultations. This is particularly important in the action area due to the large number of undeveloped small parcels in Pima County that when developed, will further reduce the amount of suitable habitat, increase fragmentation, and degrade habitat conditions in this area in particular. Also, we are aware of at least two actions that have graded greater than 4 ha (10 ac) without filing for a section 402 or 404 permit and have thus not undergone section 7 consultation.

## CONCLUSION

After reviewing the current status of the pygmy-owl, the environmental baseline for the action area, the effects of the proposed Tecolote de Oro residential development, and the cumulative effects, it is the Service's biological opinion that this development is not likely to jeopardize the continued existence of the pygmy-owl. Due to the location of the proposed action within critical habitat and its relative small size, it is the Service's biological opinion that the proposed development is not likely to result in the destruction or adverse modification of critical habitat. We base these conclusions on the following:

1. The project site is not within a known territory of a pair or resident pygmy-owl.
2. The project site will be surveyed in the spring of 2001, using the current survey protocol (AGFD and USFWS 2000). If grading activities have not commenced at the site prior to January 1<sup>st</sup> of any given year, pygmy-owl surveys will be conducted according to the current protocol.

3. If a new owl is found within 600 m [0.4 mi]) of the project site in or adjacent to ongoing construction activities the following measures and those in the section 3.2.2 and Exhibit 1 of the BA ( WestLand Resources 2000) will apply:

If the Service, EPA , or applicant become aware of a new pygmy-owl nest or activity center of a pygmy-owl on or within 600 m (0.4 mi) of the subject property, they shall immediately notify each of the other agencies or parties. No additional clearing of vegetation will occur within this area until the Federal agency, applicant, and the Service conduct a site specific analysis regarding this new information and the effects of ongoing and proposed activities to the pygmy-owl. The Service has determined the following activities within the parameters outlined below **will not** affect the pygmy-owl beyond that which we have analyzed in this biological opinion and construction activities may continue, provided each of these conditions are met.

- a. Clearing of vegetation that is suitable pygmy-owl habitat outside of the estimated home range (113 ha [280 ac]) or 600 m (0.4 mi) radius of a pygmy-owl nest or activity center;
- b. Construction noise disturbance outside of a 400 m (0.25 mi) radius of a pygmy-owl nest or activity center;
- c. New construction noise disturbance of any intensity between a 100 m (330 ft) and 400 m (0.25 mi) radius of a pygmy-owl nest or activity center outside of the breeding season (February 1 through July 1); and
- d. Ongoing construction noise disturbance of the same or less intensity of that occurring during the period of time that the territory was being established up to 400 m (0.25 mi) radius of a pygmy-owl nest or activity center at any time during the year.

4. The project will only disturb 20.6% of the project area.

#### **INCIDENTAL TAKE STATEMENT**

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

## AMOUNT OR EXTENT OF TAKE

We do not anticipate the proposed action will incidentally take any pygmy-owl based on the lack of any documented use on or immediately adjacent (within 0.8 km [0.5 miles]) to the project site. In the event a new owl site is established on or immediately adjacent to the project site, we do not anticipate incidental take to occur for activity that falls within the parameters specified in the Conclusion section above. Activities outside these parameters will require additional analysis not covered in this opinion as specified on the Reinitiation Notice section below.

### **Disposition of Dead or Injured Listed Animals**

Upon finding a dead or injured threatened or endangered animal, initial notification must be made to the Service's Division of Law Enforcement, Federal Building, Room 8, 26 North McDonald, Mesa, Arizona (602/261-6443) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of listed animal species shall be submitted as soon as possible to the nearest Fish and Wildlife Service or AGFD office, educational, or research institutions (e.g., University of Arizona in Tucson) holding appropriate State and Federal permits.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution before implementation of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any treated listed animal survive, the Service should be contacted regarding the final disposition of the animal.

## **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

1. The EPA should conduct or fund studies using both monitoring and telemetry, to determine pygmy-owl habitat use patterns and relationships between owls and the human interface in northwest Tucson. Surveys involving simulated or recorded calls of pygmy-owls require an appropriate permit from the Service. AGFD should also be contacted in regard to State permitting requirements.

2. The EPA should continue to actively participate in regional planning efforts, such as Pima County's Sonoran Desert Conservation Plan, and other conservation efforts for the pygmy-owl.
3. The EPA should assist in the implementation of recovery tasks identified in the pygmy-owl Recovery Plan when approved by the Service.

#### **REINITIATION - CLOSING STATEMENT**

This concludes reinitiation of formal consultation on the actions and species outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continuing efforts to conserve listed species. If we can be of further assistance, please contact Debra Bills (602) 640-2720 (ext. 239) or Sherry Barrett (520) 670-4617. Please refer to consultation number 2-21-00-F-052 in future correspondence concerning this project.

Sincerely,

David L. Harlow  
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (ARD-ES)

Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ  
Director, Arizona Department of Environmental Quality, Phoenix, AZ (Attn: R. Wilson)

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